

Commercial New Construction Custom Projects

Commercial new construction (CNC) is a hard-to-reach market for energy conservation measures. Energy conservation measures not implemented in new buildings at the time of construction are considered lost opportunities because most of the energy savings can not be captured cost effectively as retrofit measures.

BPA is working on several options to streamline the achievement of CNC energy savings, including a small commercial prescriptive approach that

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Benton PUD Lights Service Territory with CFLs

Benton PUD (BPUD) , Kennewick, Wash. (<http://www.bentonpud.org/>), provided about 16,000 compact fluorescent lights to their customers in two different parking lot events last fall.

These successful events were promoted through various means, including:

- Bill insert;
- BPUD Newsletter;
- Press release;

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Cowlitz County PUD Hosts Lighting Training



Cowlitz PUD Senior Customer Service Advisor Rob Salberg and BPA engineer Craig Ciranny provide an overview of technologies at a lighting training session.

Cowlitz County PUD (<http://www.cowlitzpud.org/>), located in Longview, Wash., recently hosted several training sessions on commercial and industrial lighting. The first, on January 31, 2007, was for utility staff and was conducted by Craig Ciranny, BPA's lighting expert. Five neighboring utilities participated in the training.

Topics included existing and new lighting technologies, marketing and vendor involvement, and how to enter projects in the Planning, Tracking, and Reporting system. Cowlitz and Columbia River PUD (<http://www.crpud.net/>) passed out examples of their lighting marketing materials, leading to an excellent discussion of marketing strategies.

The second training session on February 7 was for Cowlitz's commercial and industrial customers. It was led by Rob Salberg, Cowlitz's Commercial Energy Efficiency Program lead, and Craig Ciranny. Rob walked



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Peace Health Commits to Energy Efficiency

In 2006, Peace Health, owner of several medical facilities in the Northwest, set a 10 percent energy reduction goal within three years for all their properties. Ron Tolleson, Director of Facilities at Peace Health's St. John Medical Center in Longview, Washington, said, "First, we spent six months studying how to capture the savings. Now we are into the practical applications of the recommendations."

Garage lighting was one of the first projects. The parking structure was poorly lit with 141 halogens at 114 watts each. They were hard to maintain, and somewhat dim for patients and workers who use the structure at night in a state where winter's dark hours are extensive. Tolleson expected the retrofits to take around one month; but due to ordering problems and mobilization, the completion took two and a half months. The change is dramatic. While the maintenance crew is pleased with less maintenance, and the budget staff is glad to see the decrease in power usage, the hospital staff and the patients are the most pleased. The increased visibility provides an environment that promotes safety.

When asked to advise building managers and owners who are considering installing energy efficiency measures, Tolleson said, "Go for it. Find a good local contractor and supplier. Contact your local utility. We got a nice rebate." He's quick to praise **Cowlitz PUD**. "They came out, walked through the project, even did a pre and post [measure installation] inspection. Jim Wellcome was very clear telling us what we had to do to get the rebate."

What's next for Tolleson and Peace Health? Several projects are under way, including hospital controls upgrades and a kitchen exhaust fan control that powers down when the kitchen is not used. The unique fan application is the first in the state of Washington. Peace Health is committed to implementing energy efficiency installations at all properties.

-- Becky Clark (503) 230-3158

Save Energy Consumed by Refrigerators

The City of Plummer, Idaho, provided information to its electric utility customers on how to save energy consumed by their refrigerator. Customers were pleased to receive the information, and the City wishes to share it with other utilities.

Refrigerators can use up to 20 percent of the total electricity in your home. These tips will help you get the most out of your refrigerator.

- Maintain the right temperature in your refrigerator and freezer. The refrigerator should be set between 38° F and 42° F.
- Also, a full refrigerator takes less energy than an empty one. Fill extra space with gallon jugs of water placed in the back of both the freezer and refrigerator.
- Dust and pet hair can build up on the condenser coils and cause the refrigerator motor to work harder. Clean them at least twice a year. The coils are located on the bottom or the back of most models.
- Check the seals for cracks or worn areas. The doors should close tightly and stay closed. Test this by placing a dollar bill across the seal and closing the door on it. If the dollar pulls out easily, the worn seal needs to be replaced.
- Humidity escapes from uncovered foods and the compressor must work harder to remove the excess humidity.

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Benton PUD Lights Service Territory with CFLs

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- News interviews on three television stations;
- Radio advertising; and
- Printed material to explain the value of saving energy with CFLs.

The CFLs are efficient, and so was the drive-through parking lot process for giving them away. Customers drove to a line in the parking lot, opened their car windows, and received two CFLs each.

Customers were personally thanked by BPUD staff for "helping us save energy." At times there were 10 or more cars in line. BPUD staff took the opportunity to walk alongside the cars and answer questions as they moved forward.

At a local home show, BPUD provided an additional 7,000 CFLs to customers.

Several recipients commented on the CFLs.

- "I've tried these, I like them."
- "I've wanted to try these."
- "I've used these in the past, and have some concerns."

BPUD staff took the opportunity to educate these customers and others on how technology has improved and how the price of bulbs has decreased.

Funding for the CFLs was provided through the BPA Conservation Rate Credit.

-- Chris Tash (509) 527-6217

Cowlitz County PUD Hosts Lighting Training

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through a PowerPoint presentation describing the Cowlitz program, and Craig provided an overview of lighting technologies. The final training session that afternoon trained Cowlitz's lighting vendors on the program and followed an agenda similar to the morning session.

Cowlitz also plans outreach to the local Chamber of Commerce and other business associations. Generic versions of Cowlitz's PowerPoint presentation, meeting invitations, and agendas will be available on BPA's C&I Lighting Roadmap web site: <http://www.bpa.gov/Energy/N/projects/lighting/>.

-- Mark Ralston (503) 230-3175



For information on the proper disposal of CFLs and state regulations, visit <http://www.lamprecycle.org/>

Clark Public Utilities Hosts NWPPA/NEEI Commercial Building Audits

April 19 - April 20

8600 NE 117th Avenue, Vancouver, WA

<http://www.nwppa.org/web/education/educational.shtml>

The BPA Energy Efficiency newsletter is published quarterly on or about the first day of the months of January, April, July, and October. Send contributions to Jean Oates, KLJB-1, Bonneville Power Administration, P.O. Box 3621, Portland, OR 97208, or e-mail your ideas/articles/photos to eenewsletter@bpa.gov.



Continuous Energy Improvement Champions

BPA projects were nearly half of 22 that were named 2006 Continuous Energy Improvement Champions during the 2007 Northwest Food Manufacturing and Packaging Expo held in Portland in January.

Basic American Foods - Moses Lake, Washington; Energy Champion: Rob Stokes; Corporate Sponsor: Brian Meiners; Utility Representatives: John Molitor, Grant County PUD and Tom Osborn, BPA

Basic American Foods - Blackfoot, Rexburg and Shelley, Idaho; Energy Champions: Dan Huff, Steve O'Brien and Brent Turner; Corporate Sponsors: Todd Peretti and Nelson Rovig; Utility Representatives: John Mackay and Randy Thorn, Idaho Power

Darigold - Jerome, Idaho; Energy Champion: Ron Williams; Corporate Sponsor: Dave Duffy; Utility Representatives: Mike Pohanka and Randy Thorn, Idaho Power

Genie Industries - Moses Lake, Washington; Energy Champions: Larry Miller and Joe Nitta; Corporate Sponsors: Mark Albright and George Santiago; Utility Representatives: John Molitor, Grant County PUD and Tom Osborn, BPA

Glanbia Cheese - Gooding, Idaho; Energy Champion: John Haake; Corporate Sponsor: Steve Maughan; Utility Representatives: Mike Pohanka and Randy Thorn, Idaho Power

Glanbia Cheese - Twin Falls, Idaho; Energy Champion: Dick Vawser; Corporate Sponsor: Steve Maughan; Utility Representatives: Mike Pohanka and Randy Thorn, Idaho Power

Henningsen Cold Storage Co. - Hillsboro, Oregon; Energy Champion: Pete Lepschat; Corporate Sponsor: Paul Henningsen; Utility Representatives: Garrett Harris, Forest Grove Light and Power and Todd Amundson, BPA

Jerome Cheese - Jerome, Idaho; Energy Champion: Rex Minchey; Corporate Sponsor: Bill Reibesell; Utility Representatives: Mike Pohanka and Randy Thorn, Idaho Power

National Frozen Foods

- Moses Lake, Washington.; Energy Champion: Jason Johnston; Corporate Sponsor: Duane Francisco; Utility Representatives: John Molitor, Grant County PUD and Tom Osborn, BPA

New Season Foods - Forest Grove, Oregon; Energy Champion: Randy Egger; Corporate Sponsor: Mark Frandsen; Utility Representatives: Garrett Harris, Forest Grove Light and Power and Todd Amundson, BPA

NORPAC Brooks Plant #5 - Salem, Oregon; Energy Champion: Stan Baggett; Corporate Sponsors:

George Smith, Ed Beal and Mark Croeni; Utility Representatives: Tim Custer and Doug Findlay, PGE

Ocean Spray Cranberries, Inc. - Aberdeen, Washington; Energy Champion: Eric Hensley; Corporate Sponsor: Rick Hole; Utility Representatives: Kevin Howerton, Grays Harbor PUD and Todd Amundson, BPA

Power Bar - Boise, Idaho; Energy Champion: Joe Parrish; Corporate Sponsor: Aaron Davis; Utility Representatives: Mike Pohanka and Randy Thorn, Idaho Power

Quincy Foods - Moses Lake, Washington; Energy Champion: Bruce Miller; Corporate Sponsor: Chris Vogel; Utility Representatives: John Molitor, Grant County PUD and Tom Osborn, BPA

Sabroso Co. - Medford, Oregon.; Energy Champion: Lance Repp; Corporate Sponsor: Renee Thresher; Utility Representatives: Rich Reichert, Energy Trust of Oregon and Claudia Steinbroner, Pacific Power

Seneca Foods - Buhl, Idaho; Energy Champion: Clay Montgomery; Corporate Sponsor: Russ Grubb; Utility Representatives: Mike Pohanka and Randy Thorn, Idaho Power

Simplot - Caldwell, Idaho; Energy Champion: Don Sturtevant; Corporate Sponsor: Reggie Pederson; Utility Representative: Randy Thorn, Idaho Power

Simplot - Moses Lake, Washington; Energy Champion: Bill Callahan; Corporate Sponsor: Richard Ortiz; Utility Representatives: John Molitor, Grant County PUD and Tom Osborn, BPA

Snokist Growers - Yakima, Washington; Energy Champion: Al Luther; Corporate Sponsor: Paul Dickman; Energy Team: Manuel DeLoza, Doug Meeks and Abel Suarez; Utility Representative: Ed Ulmer, Pacific Power

Tree Top - Prosser, Washington; Energy Champions: Ray Hager and Ben Hamblat; Corporate Sponsors: Jerry Kobes and Terry Morgan; Utility Representatives: Kevin Fischer and Christie McAloon, Benton County PUD

Tree Top - Selah, Washington; Energy Champion: Kim Kirkevold; Corporate Sponsor: Jerry Kobes; Utility Representative: Ed Ulmer, Pacific Power

Tree Top - Cashmere and Wenatchee, Washington; Energy Champions: Bob Askland, Mike Garner, Bill Redmon and Gary Stapleton; Corporate Sponsor: Joe Brooks; Utility Representative: Jim White, Chelan PUD

-- Mira Vowles (503) 230-4796



What in the World is the RTF?

The Regional Technical Forum (RTF) was established in 1999 by the Northwest Power and Conservation Council to give advice on technical matters related to conservation and renewable resources development. The RTF

- Develops standardized protocols for verifying and evaluating conservation savings;
- Tracks progress toward regional conservation and renewable resource goals;
- Provides feedback and suggestions for improving the effectiveness of conservation and renewable resource development programs in the region;
- Conducts engineering and economic analysis to determine conservation measure savings and cost-effectiveness; and
- Maintains an extensive online conservation data base.

The RTF provides technical recommendations to BPA and regional conservation program operators regarding conservation measure savings and cost-effectiveness. It maintains technical standards for measure installation, such as the Performance Tested Comfort System™ standards for duct sealing and heat pump installation. It conducts technology reviews and evaluations of energy efficiency measures. All recommendations require a majority vote of the RTF members.

RTF members are selected for their technical expertise and experience rather than to represent specific constituencies. Members must meet the following standards. They must:

- Have expertise and experience in the areas of economic and engineering analysis and the planning, implementation, and evaluation of conservation programs and renewable resource projects;
- Review materials before meetings; and
- Expect to be appointed to a subcommittee(s).

In limited instances, RTF members can be reimbursed for travel if their employer does not otherwise reimburse them.

From the start, the Council recognized the value of technical experts who are interested in specific issues but either cannot or do not wish to serve full time on the RTF. Individuals can request to be appointed as "Corresponding

Members," which ensures they will receive meeting agendas, working papers, and meeting minutes. Corresponding members are encouraged to participate in RTF meetings and provide written comments and suggestions when topics in their area of interest or expertise are discussed, however they do not have a vote and are not eligible for compensation.

The RTF meets all day about 10 times a year and frequently appoints special subcommittees to carry out work between meetings. All RTF meetings are open to the public and all RTF agendas and meeting materials, including materials from past meetings are posted on its web site.

The link below has a list of RTF voting members and Corresponding Members.

<http://www.nwcouncil.org/rtf/membership.htm>

-- Becky Clark (503) 230-3158

(This article suggested by Vern Rice, Central Electric Co-op.)

Save Energy Consumed by Refrigerators

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- And lastly, when old models wear out, replace them with appliances that have earned the ENERGY STAR® label.

The City of Plummer is offering rebates for qualified purchases of refrigerators and freezers for a limited time.

-- Rosalie Nourse (509) 358-7463



Commercial New Construction Custom Projects

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should be available by October, and regional rewards for early project identification that should be available by August.

Several frequently asked questions about CNC are listed below.

- Q What buildings qualify as CNC?
- A New commercial buildings, additions to commercial buildings, major renovations (changes in multiple end-uses, where a permit is required) or new residential multifamily building higher than three stories.
- Q What is one of the largest controllable operating expenses for office buildings?
- A The Building Owner and Manager's Association (BOMA) reports energy represents one-third of variable expenses.
- Q What baseline does BPA accept for commercial new construction custom projects?
- A State commercial building code requirements.
- Q What kinds of savings calculations are required?
- A Whole building computer models such as DOE 2.1 or EQuest, are preferred for complex buildings. Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ modeling is acceptable. If the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) 90.1, 2004, is used as the modeling baseline for a LEED model, the differences between code and ASHRAE should be noted. Proposals also need to specify gas and electric use and savings, separately.
- Q Is technical assistance available?
- A BPA-funded Technical Assistance is available on a case-by-case basis and must be approved in advance. Requests can be made through your Energy Efficiency Representative.

- Q How should we document the benefit-cost ratio (BCR)?
- A BCR can be based on either an individual measure or the whole package of measures. Incremental costs and interactive energy savings are acceptable. The BCR must be greater than 1.0 for all custom projects.
- Q What is the process to obtain BPA funding for a CNC custom project?
- A Utilities can use either CRC or CAA funding. For CAA funding, the utility can request additional funding under the Commercial/Industrial Offer, sufficient to support the CNC activity. All projects regardless of funding source must be submitted as custom proposals using the Planning, Tracking, and Reporting system. The CNC reimbursement rate is \$0.20 per kWh, capped at 70 percent of project costs (which includes payments for technical assistance).
- Q How should lighting measures be included?
- A Deemed lighting measures can be included in either a package of measures, paying on a "whole building" kWh basis, or "incented" off the CNC deemed-fixture list.
- Q For a CNC custom proposal, what measurement and verification (M&V) plan is recommended?
- A The M&V plan should be a calibrated model*, based on a full year at 80 percent minimum occupancy or less, if deemed reasonable. All M&V plans are subject to BPA review and approval in advance of project implementation.

-- Mira Vowles (503) 230-4796

* Option D of the International Performance Measurement & Verification (IPMV) protocol



University of Idaho Integrated Design Lab Professional Training

FREE Live video streaming opportunities thru BetterBricks (Northwest Energy Efficiency Alliance) will be offered from 3:30 to 5 p.m. PDT, April 18 and May 2.

APRIL 18 Advanced Building Guidelines: The Advanced Buildings Suite (AB) of manuals was developed by New Buildings Institute specifically to address the small building (less than 50,000 square feet) sector. AB:

- Provides a simplified prescriptive path to achieve predictable energy and demand savings from new and renovated commercial buildings without the costs associated with modeling.
- Is set at a performance level 30 percent beyond code. Unlike LEED, AB focuses exclusively on energy, rather than more broadly on sustainability issues.
- Is integrated design in a prescriptive package. AB is recognized by LEED as a prescriptive option.

MAY 2 Energy Conservation in the Grocery

Industry: John Bernardo, former energy manager of a large grocery chain, will share stories on how efficiency can change the grocery energy-use paradigm. The session will:

- Present the strategies and technologies of high performing groceries, including the benefits of recommissioning, the financial and social benefits of energy conservation efforts, and the use of carbon credits for funding LEED certification.
- Provide a glimpse into the energy efficiency transformation process within a national corporate operation.
- Provide a good understanding of the energy using systems and present the case study for design changes.

On APRIL 4, the initial session of this series, **Getting to 50** described the characteristics of high performing buildings. During 2006 the New Buildings Institute compiled a database of the top 100 high performance buildings worldwide to document the 100 buildings that exceeded code by 50 percent. Some buildings were included because of their interesting applications of energy reduction strategies. NBI's Mark Frankel said, "On

our way to carbon neutral, zero net energy, we need to first get to 50!"

For more information on sessions, call Ken Baker at (208) 861-5736.

Lane Community College Energy Efficiency Internship Program

In 1980, Oregon's Lane Community College (LCC) Science Department received a National Science Foundation Grant to start a curriculum in residential energy efficiency and solar thermal energy. The funding and program ended in 1988. Four years later, BPA asked LCC to re-institute an energy efficiency course with an emphasis on commercial applications and provided seed money to get it started. Eugene Water and Electric Board (EWEB), Eugene, Ore. (<http://www.eweb.org/>), began funding in 1998 with over \$120,000 each year. Within a few years, LCC added a renewable certificate to their energy management degree program. The programs began self-funding after Oregon's Measure 5 removed the courses from the Oregon general fund umbrella.

Approximately 30 students enroll in the two-year degree program each year. Students get training suitable for jobs with utilities, government or business. They learn skills that will enable them to:

- Perform audits, analyze results, and recommend actions;
- Understand building components, such as HVAC, shell, and lighting technology; and
- Perform an Quick Energy Simulation Tool (eQUEST) simulation

Each student is required to get a minimum of six credits of cooperative education as an intern. Some get as many as 18 credits.

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Lane Community College Energy Efficiency Internship Program

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Program Benefits

Larry Scott, LCC Intern Coordinator, sees the following key benefits to the intern program. It:

- Allows students to get academic recognition for learning occurring outside class;
- Provides opportunities for students to make business connections for the school-to-work transition;
- Allows the intern to test-drive jobs to focus on a fit – some will not work out; and
- Keeps the college up-to-date on business needs.

How to Request an Intern

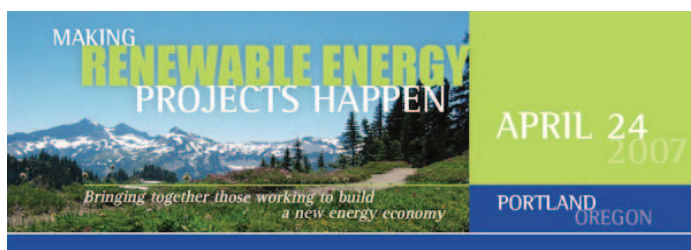
The utility calls LCC and describes the skill set they need. The advisor might post the job announcement or contact a student who is an ideal fit. The student then follows-up and requests an interview.

At some point the coordinator makes a site visit, ensuring the organization and LCC agree on the arrangement and evaluation. LCC advocates for the worker to get paid, establishing a professional status, but there is no requirement for a salary.

Timing to request an intern ranges from days to weeks. The earlier a utility or business can request an LCC intern, the better. Most interns work part-time, balancing the job with classes. If it is away from Eugene, internships may be full-time or done in the summer.

Utilities with Intern Experience

David Christie at the City of McMinnville, Ore. (<http://www.mc-power.com/>), had a specific need with a deadline looming. He searched at several colleges, selected an LCC candidate, and in less than a month began to see results. The utility was able to double their conservation effort, and got all end-of-year work completed.



<http://www.nebc.org/content.aspx?pageid=12>

Richard Jackson-Gistelli said Emerald PUD (<http://www.epud.org/>), Eugene, Ore., found that assigning the temporary employee to one person often too much of a single staff member. They devised rotational assignments, which turned out to be highly successful in spreading the time needed to guide the intern among the full-time employees. In return, the intern receives a “360 degree” overview of energy services at a utility including commercial and industrial experience, residential exposure, and marketing time. The temporary supervisors grew along with the intern, gaining supervisory experience.

Interns usually bring a fresh approach in thinking, such as creative ways to use the Internet to improve customer service. The staff at Emerald PUD learned from and appreciated intern ideas.

Both utilities said intern evaluation is completed on an easy-to-use form. Christie said the form could be completed in less than 30 minutes.

Both first-year and second-year students are available for internships. One intern unfamiliar with business routines observed, “This office stuff, when we’re students we don’t think about it.” The internship required him to blend textbook descriptions with reality.

Learning to function productively in a work environment is second nature for the majority of LCC interns. Most are not traditional college students - teenagers with tuition provided by parents. These are older students with basic work experience in the process of changing jobs or careers; and they are usually motivated to be successful. Some are single-parents.

Contact

The LCC Energy Efficiency Internship program offers valuable experiences to students and utilities. For more information, contact Roger Ebbage, Director of Energy Programs at ebbager@lanecc.edu or call (541) 463-3977.



Start Your Engines

By Kathy Kiefer, Grant Public Utility District

Encouraging ideas about alternative energy resources and applications begins one student at a time and starts with today's energy producers. At least that's what drives conservation education efforts undertaken by the Grant County PUD Energy Services Department, Ephrata Wash. (<http://www.gcpud.org/>)

REC Silicon, a manufacturing subsidiary of Renewable Energy Corporation (REC), Norway, is the world's largest dedicated producer of solar grade polysilicon for the photovoltaic industry. One of REC Silicon's manufacturing facilities is located in Moses Lake, and is served by the Grant PUD.

During the summer of 2006, Jim Frank, one of Grant PUD's Energy Services Specialists, conceived of a project to teach 5th grade students about solar power. He described the threefold purpose of the project: 1) to provide a fun experience with solar power, 2) to give students a basic understanding of how solar cells convert sunlight to electricity and, 3) to stimulate ideas about the potential benefits of solar powers for humankind.

The effort involved students from eight Moses Lake schools. Students worked in teams of two. Each team started with a kit provided by REC Silicon and Chemi-Con, a nearby electronic manufacturing firm. The kits consisted of a chassis, wheels, small solar panel and a DC motor. After receiving the kits on Monday, the students had a week to build their cars.

Then on Friday, the schools held races on an elevated track that allowed the students to watch and

cheer. The team whose car covered the 16-foot track the fastest was declared the winner. Winning teams from each of the schools then competed against each other, with the grand champion team receiving an advanced solar car kit.

After each school competition, Frank used the Grant PUD Energy Conservation Trailer to teach the students about various solar power applications, encouraging them with a reminder that any one of them could become a solar engineer with the ability to make a difference in people's lives.

Volunteers from REC Silicon also helped on race days and committed to continuing the program in years to come. Noted Scott Brown, REC Silicon's Senior Operations Manager, "We greatly enjoyed this opportunity to partner with the PUD on educating 5th graders about the potential of solar power."

This article was published in the January 2007 issue of Connections, a publication of the Washington Public Utility Districts Association.

Note: While developing the Solar Car project, Jim Frank and the Grant County Energy Services Team, Diane Chestnut, Frank Majer, and Jon Molitor, also:

- Negotiated a Scientific Irrigation Scheduling contract with BPA;
- Engaged BPA, the Northwest Energy Efficiency Alliance's (NEEA) Residential Program Team and two manufacturers in implementing a pilot project to test the viability of "mini split heat pumps;"
- Successfully negotiated lighting and control measure upgrade projects for the new Yahoo and Microsoft Server Farms being built in Quincy, Wash.;
- Collaborated with NEEA's Industrial Efficiency Alliance to bring Best Practice training to the Moses Lake area; and
- Will leverage the resources of the Integrated Design Lab in Spokane to assist the Moses Lake School District in incorporating energy efficient technologies into two new schools.

-- Tom Hannon (509) 358-7450

Daylight Saving Time was nearly a month earlier in coming than it has been in previous years. The change was one result of President George W. Bush signing the Energy Policy Act of 2005. Visit the following web site for more information on DST and its history:

<http://webexhibits.org/daylightsaving/b.html>

(Submitted by Jim Wellcome, Cowlitz PUD.)



Alternative Energy Stars in Pasco Students' Bulldog House

This excerpt adapted from an article published Wednesday, March 28, 2007, in the Tri-City Herald

SARA SCHILLING, HERALD STAFF WRITER

About 30 students from the Pasco, Wash., High School construction trades program spent March 27 installing solar panels on the roof of a three-bedroom house they're building for class.

Money for the panels comes from a \$15,000 grant from BPA, and Brashear Electric and Franklin PUD (<http://www.franklinpud.com/>) are helping with installation.

"We always wanted to do something like this on the Bulldog House*," said teacher John Weatherby. "(Alternative energy) is something a lot of people don't understand. By the time these (students) are my age, it's going to be everyday stuff." For now, the teens are blazing new territory.

This is the 10th Bulldog House built by students at the school, but the first one equipped with five 200-watt solar panels that will help slash the power bill and make the house more energy efficient.

The students also are putting in a system that will use solar energy to heat water in the Pasco home.

The teens do most of the work -- everything from putting up walls to putting in a deck -- and subcontractors fill in the rest, Weatherby said.

After all the 200-watt panels were on the roof, some students grabbed panels for the water system from the unfinished garage.

Installing both systems will take some more time, and so will completing the house. But the teens said they enjoy the work.

Bulldog House X is believed to be the only new home in Pasco using so much solar energy.

Read this article and others at the *Tri-City Herald* online:

<http://www.tricityherald.com>



* "Bulldogs" is the name of the Pasco High School sports team.



A Day in the Life of an Energy Efficiency Field Engineer

A recent engineering program graduate contacted BPA for information on what a job as a mechanical engineer in Energy Efficiency entails. Erin Hope, a mechanical engineer in BPA's Spokane, Wash., office responded to the graduate's questions.



Erin Hope

1. What tasks fill your day (i.e., design, writing, meetings, site visits, etc)?

Most of my days consist of writing, analysis, and meetings. The writing is a combination of reports, updates, proposals, etc. There are days that I am in an industrial or commercial facility

conducting an energy audit or measurement and verification of energy efficiency measures they have installed. The actual time spent in various facilities varies by time of year and the various plant budgets for energy projects.

Examples of the items I will be working on over the next three weeks are:

- Energy analysis of the installation of a variable speed drive on a 250 horsepower well pump with varying suction head and flow requirements.
- Review and approval of a compressed air energy audit of a lumber mill conducted by a consulting firm. Work with the utility and mill on the possibility of implementing the energy efficiency measures.
- Organize a two to three hour meeting for lighting distributors/installers and BPA customers in the Spokane region to present the BPA lighting program.
- Work with a local utility on energy savings analysis for three rebuilt potato storage facilities.

2. What skills are needed to be an extraordinary employee?

These skills include being a self-starter, having patience, the ability to work in a team, organizational skills (not including your desk), and ability to understand immediate needs, while also working towards the future.

3. What education is required to be an engineer at BPA?

Speaking for myself, a B.S. in Mechanical Engineering, and a fair amount of work experience. When working as a mechanical engineer in anything but research, experience is essential. Consider this, if someone points out a rotary screw air compressor or a four stage centrifugal pump to you without telling you what it is, would you know what you are looking at? I have worked with engineers that could work out any pump or flow calculation but did not know what schedule 40 pipe is or what a centrifugal pump actually looks like.

4. How long does a typical project last?

A "typical" project can last from three weeks to two years, depending on a multitude of factors. I had one project that lasted 14 months, but only took 12 total hours of my time. In this position, the duration of the project and the amount of time spent on it are not always linked.

5. Is there much teamwork or is it mostly individual work?

A considerable amount of teamwork is required by my job. Some of this is in project teams where I work alone and represent BPA. Sometimes I work with a contract specialist, a customer representative and the utility.

-- Erin Hope (509) 358-7415



BPA Energy Efficiency Staff Retirements



Ken Keating



Tom Foeller

Ken Keating will retire from BPA on April 27 after 25 years with the agency.

Ken has been an active force in conservation and evaluation in the region. He managed the BPA Evaluation Group in the 1980s and most recently has been the Energy Efficiency Evaluation Team Lead.

Tom Foeller retired from BPA in December after 22 years with the federal government.

All but two of his 19 years at BPA were devoted to conservation and energy efficiency. Most recently, Tom managed the Energy Efficiency Marketing Group.

Tom retired for health reasons. He urges everyone to schedule a colonoscopy and nag loved ones to have one. A baseline screening, if no problems are discovered, is good for ten years.

